

THAT WHICH IS CLAIMED IS:

1. A method of monitoring anticoagulation therapy of a patient, wherein the anticoagulation therapy includes a patient-administered medication regimen selected from the group consisting of warfarin  
5 and vitamin K antagonists, heparin and glucosaminoglycans, and direct thrombin inhibitors, and a patient-administered regimen for a coagulation test that monitors efficacy of the medication regimen, wherein the coagulation test is selected from the group  
10 consisting of prothrombin time (PT) test, partial thromboplastin time (PTT) test, activated clotting time (ACT) test, heparin assays, ecarin clotting time (ECT) test, and thrombin clotting time test, wherein the apparatus is configured to receive and analyze  
15 information regarding patient compliance with the patient-administered medication and coagulation test regimens, and wherein the apparatus is configured to modify the patient-administered medication and coagulation test regimens, the method comprising the  
20 following steps performed by a portable apparatus:  
receiving data from a patient, wherein the patient data includes at least one of physiological data, pathophysiological data, biological data, psychological data, neuropsychological data, and  
25 behavioral data;  
assessing severity of the received patient data;

prompting the patient to perform a patient-administered coagulation test if the received patient  
30 data are assessed to be above a threshold severity  
level;

receiving coagulation test results from the  
patient-administered test; and

communicating the received coagulation test  
35 results from the patient-administered test to a  
healthcare provider via a communications network.

2. The method according to Claim 1 further  
comprising the steps of:

assessing severity of the received  
coagulation test results from the patient-administered  
5 coagulation test;

modifying the patient-administered medication  
regimen if the received coagulation test results from  
the patient-administered coagulation test are assessed  
to be above a threshold severity level; and

10 communicating the modified patient-  
administered medication regimen to the patient.

3. The method according to Claim 2 further  
comprising the step of communicating the modified  
patient-administered medication regimen to a healthcare  
provider via a communications network.

4. The method according to Claim 2 further  
comprising the step of communicating the modified  
patient-administered medication regimen to a remotely  
located data processing system via a communications  
network.

5. The method according to Claim 1 further comprising the step of receiving from the patient information about patient compliance with the patient-administered medication and coagulation test regimens during a preceding time period.

6. The method according to Claim 1 further comprising the step of automatically communicating the received patient data to a healthcare provider via a communications network if patient data are assessed to be above a threshold severity level.

7. The method according to Claim 6 wherein the step of automatically communicating the received patient data to a healthcare provider comprises paging the healthcare provider.

8. The method according to Claim 4 further comprising the step of communicating information regarding medication dosage to the patient in response to determining that the patient did not comply with the medication regimen in the preceding time period.

9. The method according to Claim 1 wherein the received patient data comprises at least one of information about hemorrhagic symptoms experienced by the patient and information about non-hemorrhagic symptoms experienced by the patient.

10. An apparatus that monitors anticoagulation therapy of a patient, wherein the anticoagulation therapy includes a patient-administered

medication regimen selected from the group consisting  
5 of warfarin and vitamin K antagonists, heparin and  
glucosaminoglycans, and direct thrombin inhibitors, and  
a patient-administered regimen for a coagulation test  
that monitors efficacy of the medication regimen,  
wherein the coagulation test is selected from the group  
10 consisting of prothrombin time (PT) test, partial  
thromboplastin time (PTT) test, activated clotting time  
(ACT) test, heparin assays, ecarin clotting time (ECT)  
test, and thrombin clotting time test, comprising:

a processor;

15 a user interface in communication with the  
processor;

computer code executable by the processor  
that receives and stores data from a patient, wherein  
the patient data includes at least one of physiological  
20 data, pathophysiological data, biological data,  
psychological data, neuropsychological data, and  
behavioral data;

computer code executable by the processor  
that assesses severity of the received patient data;

25 computer code executable by the processor  
that prompts a patient via the user interface to  
perform a patient-administered coagulation test if the  
received patient data are assessed to be above a  
threshold severity level;

30 computer code executable by the processor  
that receives and stores coagulation test results from  
the patient-administered coagulation test;

computer code executable by the processor  
that communicates the received coagulation test results  
35 from the patient-administered coagulation test to a

healthcare provider via a communications network.

11. The apparatus according to Claim 10 further comprising:

computer code executable by the processor that assesses severity of the received coagulation test results from the patient-administered coagulation test;

computer code executable by the processor that modifies the patient-administered medication regimen if the received coagulation test results from the patient-administered coagulation test are assessed to be above a threshold severity level; and

computer code executable by the processor that communicates the modified patient-administered medication regimen to the patient.

12. The apparatus according to Claim 11 further comprising computer code executable by the processor that communicates the modified patient-administered medication regimen to a healthcare provider via a communications network.

13. The apparatus according to Claim 11 further comprising computer code executable by the processor that communicates the modified patient-administered medication regimen to a remotely located data processing system via a communications network.

14. The apparatus according to Claim 10 further comprising computer code executable by the processor that receives and stores information from a patient about patient compliance with the patient-

- 5 administered medication and coagulation test regimens during a preceding time period.

15. The apparatus according to Claim 10 further comprising computer code executable by the processor that automatically communicates the received patient data to a healthcare provider via a communications network if patient data are assessed to be above a threshold severity level.

16. The apparatus according to Claim 15 wherein the computer code that automatically communicates the received patient data to a healthcare provider comprises computer code that sends a paging signal to a healthcare provider.

17. The apparatus according to Claim 13 further comprising computer code executable by the processor that communicates information regarding medication dosage to the patient in response to  
5 determining that the patient did not comply with the medication regimen in the preceding time period.

18. The apparatus according to Claim 10 wherein the received patient data comprises at least one of information about hemorrhagic symptoms experienced by the patient and information about non-hemorrhagic symptoms experienced by the patient.

19. A system that monitors anticoagulation therapy of a patient, wherein the anticoagulation therapy includes a patient-administered medication

regimen selected from the group consisting of warfarin  
5 and vitamin K antagonists, heparin and  
glucosaminoglycans, and direct thrombin inhibitors, and  
a patient-administered regimen for a coagulation test  
that monitors efficacy of the medication regimen,  
wherein the coagulation test is selected from the group  
10 consisting of prothrombin time (PT) test, partial  
thromboplastin time (PTT) test, activated clotting time  
(ACT) test, heparin assays, ecarin clotting time (ECT)  
test, and thrombin clotting time test, wherein the  
system comprises:

15 a patient apparatus, comprising:

a processor;

a user interface in communication with  
the processor;

computer code executable by the  
20 processor that receives and stores data from  
a patient, wherein the patient data includes  
at least one of physiological data,  
pathophysiological data, biological data,  
psychological data, neuropsychological data,  
25 and behavioral data;

computer code executable by the  
processor that assesses severity of the  
received patient data;

computer code executable by the  
30 processor that prompts the patient via the  
user interface to perform a patient-  
administered coagulation test if the received  
patient data are assessed to be above a  
threshold severity level;

35 computer code executable by the

processor that receives and stores  
coagulation test results from the patient-  
administered coagulation test; and  
computer code executable by the  
40 processor that communicates the received  
coagulation test results from the patient-  
administered coagulation test to a healthcare  
provider via a communications network; and  
a remotely located data processing system  
45 configured to communicate with and receive data from  
the patient apparatus, the remotely located data  
processing system comprising:

computer code that obtains patient data  
from the patient apparatus;

50 computer code that analyzes the obtained  
patient data from to identify medical  
conditions of a patient;

computer code that displays identified  
patient medical conditions for a patient in  
55 selectable, prioritized order according to  
medical severity via a remotely located  
client in communication with the central data  
processing system; and

60 computer code that displays treatment  
options for treating a selected medical  
condition for a patient.

20. The system according to Claim 19 wherein  
the patient apparatus further comprises:

computer code executable by the processor  
that assesses severity of the received coagulation test  
5 results from the patient-administered coagulation test;



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computer code executable by the processor that modifies the patient-administered medication regimen if the received coagulation test results from the patient-administered coagulation test are assessed to be above a threshold severity level; and

computer code executable by the processor that communicates the modified patient-administered medication regimen to the patient.

21. The system according to Claim 19 further comprising computer code that communicates treatment information from the remotely located data processing system to the patient apparatus.

22. The system according to Claim 21 wherein the computer code that communicates treatment information from the remotely located data processing system to the patient apparatus comprises computer code that transmits treatment information via wireless, satellite, telephone, e-mail, AVM or facsimile transmission.

23. The system according to Claim 22 wherein the computer code that communicates treatment information from the remotely located data processing system to the patient apparatus comprises computer code that modifies the medication algorithm within the patient apparatus.

24. The system according to Claim 19 wherein the computer code that obtains patient data from the patient apparatus further comprises:

computer code that analyzes data transmitted  
5 from the patient apparatus substantially simultaneously  
with the transmission thereof to the remotely located  
data processing system to identify emergency medical  
conditions requiring immediate medical attention; and  
computer code that automatically communicates  
10 treatment information to the patient apparatus for an  
identified emergency medical condition.

25. The system according to Claim 19 wherein  
the remotely located data processing system further  
comprises:

computer code that monitors patient usage of  
5 medication; and

computer code that orders medication for a  
patient from a supplier of medication.

26. The system according to Claim 19 wherein  
the computer code that displays identified patient  
medical conditions comprises computer code that  
displays selected ones of the identified patient  
5 medical conditions.

27. The system according to Claim 19 wherein  
the patient apparatus further comprises computer code  
that receives information via the user interface about  
patient compliance with the patient-administered  
5 medication regimen and the patient-administered  
coagulation test regimen during a preceding time  
period.

28. The system according to Claim 19 wherein

the patient apparatus further comprise computer code that communicates information regarding medication dosage to a patient via the user interface in response to determining that a patient did not comply with the patient-administered medication regimen in a preceding time period.

29. A method of monitoring disease therapy of a patient, wherein the disease is selected from the group consisting of asthma, cancer chemotherapy, depression, high blood pressure, seizure disorders, and thrombosis, wherein the disease therapy includes a patient-administered medication regimen and a patient-administered regimen for a test that monitors efficacy of the medication regimen, wherein the apparatus is configured to receive and analyze information regarding patient compliance with the patient-administered medication and test regimens, and wherein the apparatus is configured to modify the patient-administered medication and test regimens, the method comprising the following steps performed by the apparatus:

receiving data from a patient, wherein the patient data includes at least one of physiological data, pathophysiological data, biological data, psychological data, neuropsychological data, and behavioral data;

assessing severity of the received patient data;

prompting the patient to perform a patient-administered test if the received patient data are assessed to be above a threshold severity level;

receiving test results from the patient-

administered test; and

communicating the received test results from the patient-administered test to a healthcare provider via a communications network.

30. The method according to Claim 29 further comprising the steps of:

assessing severity of the received test results from the patient-administered test;

5 modifying the patient-administered medication regimen if the received test results from the patient-administered test are assessed to be above a threshold severity level; and

10 communicating the modified patient-administered medication regimen to the patient.

31. The method according to Claim 30 further comprising the step of communicating the modified patient-administered medication regimen to a healthcare provider via a communications network.

32. The method according to Claim 30 further comprising the step of communicating the modified patient-administered medication regimen to a remotely located data processing system via a communications network.

33. The method according to Claim 29 further comprising the step of receiving from the patient information about patient compliance with the patient-administered medication and test regimens during a  
5 preceding time period.

34. The method according to Claim 29 further comprising the step of automatically communicating the received patient data to a healthcare provider via a communications network if patient data are assessed to be above a threshold severity level.

35. The method according to Claim 32 further comprising the step of communicating information regarding medication dosage to the patient in response to determining that the patient did not comply with the medication regimen in the preceding time period.

36. The method according to Claim 29 wherein the received patient data further comprises at least one of information about a supra-therapeutic symptom experienced by the patient and information about a sub-therapeutic symptom experienced by the patient.

37. An apparatus that monitors disease therapy of a patient, wherein the disease is selected from the group consisting of asthma, cancer chemotherapy, depression, high blood pressure, seizure disorders, and thrombosis, wherein the disease therapy includes a patient-administered medication regimen and a patient-administered regimen for a test that monitors efficacy of the medication regimen, the apparatus comprising:

a processor;  
a user interface in communication with the processor;  
computer code executable by the processor that receives and stores data from a patient, wherein

15 the patient data includes at least one of physiological  
data, pathophysiological data, biological data,  
psychological data, neuropsychological data, and  
behavioral data;

computer code executable by the processor  
20 that assesses severity of the received patient data;

computer code executable by the processor  
that prompts the patient via the user interface to  
perform a patient-administered test if the received  
patient data are assessed to be above a threshold  
25 severity level;

computer code executable by the processor  
that receives and stores test results from the patient-  
administered test; and

computer code executable by the processor  
30 that communicates the received test results from the  
patient-administered test to a healthcare provider via  
a communications network.

38. The apparatus according to Claim 37  
further comprising:

computer code executable by the processor  
that assesses severity of the received test results  
5 from the patient-administered test;

computer code executable by the processor  
that modifies the patient-administered medication  
regimen if the received test results from the patient-  
administered test are assessed to be above a threshold  
10 severity level; and

computer code executable by the processor  
that communicates the modified patient-administered  
medication regimen to the patient.

39. The apparatus according to Claim 38 further comprising computer code executable by the processor that communicates the modified patient-administered medication regimen to a healthcare provider via a communications network.

40. The apparatus according to Claim 38 further comprising computer code executable by the processor that communicates the modified patient-administered medication regimen to a remotely located data processing system via a communications network.

41. The apparatus according to Claim 37 further comprising computer code executable by the processor that receives and stores information provided by the patient about patient compliance with the patient-administered medication and test regimens during a preceding time period.

42. The apparatus according to Claim 37 further comprising computer code executable by the processor that automatically communicates the received patient data to a healthcare provider via a communications network if patient data are assessed to be above a threshold severity level.

43. The apparatus according to Claim 40 further comprising computer code executable by the processor that communicates information regarding medication dosage to the patient in response to determining that the patient did not comply with the medication regimen in the preceding time period.